

ABSTRACT OF THE DISCLOSURE

Disclosed is a method and apparatus for
regenerating an oxygen-binding ability by reducing the
methemoglobin contained in hemoglobin-vesicle by light
irradiation. This method comprises adding electron
5 donors such as amino acids, saccharides, alcohols,
and/or flavin derivatives in appropriate amounts to the
inner aqueous phase of the hemoglobin-vesicle, applying
light to the vesicle when the content of methemoglobin
increases as a result of oxidation of hemoglobin,
10 thereby reducing the metohemoglobin. In this manner,
the oxygen-binding ability is recovered, thereby
maintaining the function of the hemoglobin-vesicle.

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